DATA EVALUATION RECORD

1. Chemical: Dicyandiamide

2. Test Material: Dicyandiamide, white powder designated HLA No. 41103599 by the testing laboratory. Sponsor assumed responsibility for the stability and purity of the test material. A June 6, 1986 supplement to registration package identifies the compound as SKW 8510 NS, technical grade.

3. Test Type: Avian Dietary LC_{50} - upland game bird.

4. Study ID: Avian Dietary LC_{50}, Bobwhite Quail (Colinus virginianus). Study No. 6026-455. For: SKW Trosberg AG, Trosberg, Germany, By: Hazleton Laboratories America, Inc. Chemical & BioMedical Sciences Division, 3301 Kinsman Boulevard, Madison, Wisconsin 53704. May 23, 1985.

5. Reviewed by: Zigfridas Vaituzis
Microbiologist
EEB/HED
Signature: Z. Vaituzis
Date: 10/23/86

6. Approved by: Ray Matheny
Head, Section I
EEB/HED
Signature: Ray Matheny
Date: 2/13/87

7. Conclusions:

The dietary LC_{50} to bobwhite quail was found to be greater than 5000 ppm, the highest dose tested. No detectable toxic signs, abnormal development or feeding were observed during the 8-day test period. Dicyandiamide is practically nontoxic to bobwhite quail.

The study fulfills the Guideline requirements for an Avian Dietary LC_{50} on upland game bird.

8. Recommendations:

N/A.

9. Background:

N/A.

10. Discussion of Individual Tests:

N/A.

11. Methods and Materials:

a. Test Organisms: Bobwhite quail (Colinus virginianus)

Age/Stage of Maturity: Birds were 13 days old when placed on test.

Body Weights: Mean body weight at day 0 = 27 g

Sex: Not given

Source: Thompson Quail Farm, Franksville, Wisconsin

b. Dosage Form: Dry powder mixed with bird diet (dry)

Solvent/Vehicles: None used

Route of administration: Test material was administered in the quail's diet.

c. Referenced protocol: EPA Pesticide Assessment Guidelines, Subdivision E, Hazard Evaluation: Wildlife and Aquatic Organisms (October 1982), Section 71-2 Avian Dietary LC_{50} Test.

OECD Guidelines for Testing of Chemicals, "Avian Dietary Toxicity Test," Section 205, adapted April 4, 1984.

Test Levels: 1250, 2500, and 5000 (ppm)

Dose Spacing Factor: Treated diets were fed ad libitum for 5 consecutive days.

Number per level: 10 per pen during preconditioning and test period, randomized.

Holding/Acclimation: Birds were conditioned for 8 days prior to test.

Pen/Cage Facilities: Birds were housed in 90 cm x 36 cm x 23 cm battery cages with wire mesh floors and outside walls. Common partitions were lined with galvanized metal to preclude crosscontamination; 10 birds/pen during pretest and test period.

Feeding: Treated diets were fed for 5 days, followed by 3 days feeding of untreated basal diet. Feed and water were provided ad libitum.

Physical Condition: Considered acceptable for testing.

Test Conditions:

Temperature: 23 to 26 °C

Humidity: Ambient (34% to 62%)

Photoperiod: A 12-hour light/12-hour dark photoperiod was maintained.

Diet Preparation: The basal diet (nonmedicated Hazleton Quail Starter) was mixed by serial dilution with a diet containing 5000 ppm test material. Diets apparently were prepared in a dry state.

Controls: Three randomized control groups of 10 birds each were used and designated as A, B and C. No further definition is given other than that they were not fed dicyandiamide.

Measured Test Levels: 100 g samples of each test diet were taken at time of preparation and forwarded to HLA in Vienna, Virginia, for chemical analysis of dicyandiamide content. The results of the analysis for dicyandiamide were as follows:

Diet Number	Dicyandiamide (ppm) Added	Found*
13	5000	5077
14	2500	2638
15	1250	1150

* Average of two assays

Observation Period: Observed daily for 5-day dosing period and 3 days posttreatment.

Statistical Methods: No statistical analyses were conducted because there was no mortality or toxicity to birds.

12. Reported Results:

Effects Criteria: Mortality, pharmacotoxic signs, and weight loss

LC_{50}: > 5000 ppm

NEL: > 5000 ppm

Dose Response Data: There was no mortality in any control or treatment group.

Obervation Period: 8 days

Food Consumption: Normal for all groups during treatment and recovery period.

Body Weight Changes: Normal for all groups during treatment and recovery period.

Toxic Symptoms: No observable signs of toxicity in any group during treatment and recovery period.

Necropsy Results: No mortalities; necropsies not performed.

13. Study Author's Conclusions/Quality Assurance Measures:

The test material, dicyandiamide, was evaluated for dietary LC_{50} toxicity in bobwhite quail. Based upon the results obtained in this study, the dietary LC_{50} for the test material is in excess at 5000 ppm. Body weight gains of the treated group were normal during the 5-day treatment period and the last 3 posttreatment days of the study. Feed consumptions were not affected. No signs of toxicity were noted.

A signed and dated quality assurance statement is attached to the study.

14. Reviewer's Discussion and Intepretation of the Study:

a. Test Procedures: The procedures are in accordance with protocols recommended by the Guidelines. There are no problems noted with the test methods with the following exception. The chemical dicyandiamide dry powder was mixed with bird chow apparently in a dry state. No mention is made of a liquid vehicle as recommended by the Guidelines.

As a substitute for liquid vehicle, the Guidelines recommend measurement of test chemical levels in the test diet preparation. The registrant has provided measured test levels. These are in the acceptable range.

b. Statistical Analysis: No statistical analysis is necessary since no mortalitites or other symptoms of toxicity were observed.

c. Discussion/Results: An avian dietary LC_{50} using bobwhite quail was performed. The LC_{50} was found to be greater than 5000 ppm, the highest dose tested. No detectable toxic signs or abnormal development or feeding were observed during the 8-day observation period. Dicyandiamide is practically nontoxic to bobwhite quail.

d. Adequacy of Test:

1. Validation Category: Core for technical grade dicyandiamide.

2. Rationale: Fulfills Guideline requirements.

3. Reparability: N/A.

15. Completion of One-Liner for Test: October 20, 1986.

16. CBI Appendix: N/A.